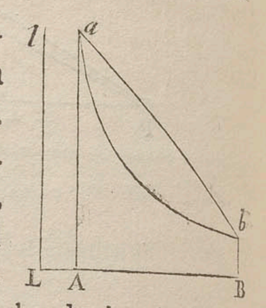
$\frac{LDq \times PS}{PE \times V} - \frac{ALB \times PS}{PE \times V}$: ubi si pro V scribatur ratio inversa vis centripetæ, & pro PE medium proportionale inter PS & $2LD$; tres illæ partes evadent ordinatim applicatæ linearum totidem curvarum, quarum areæ per methodos vulgatas innotescunt. *Q. E. F.*

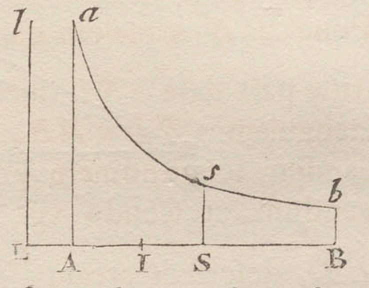
Exempl. 1. Si vis centripeta ad singulas sphæræ particulas tendens sit reciproce ut distantia; pro V scribe distantiam PE; dein $2PS \times LD$ pro PEq, & fiet DN ut $SL - \frac{1}{2}LD - \frac{ALB}{2LD}$. Pone DN æqualem ejus duplo $2SL - LD - \frac{ALB}{LD}$: & ordinatæ pars data $2SL$ ducta in longitudinem AB describet aream rectangulam $2SL \times AB$; & pars indefinita LD ducta normaliter in eandem longitudinem per motum continuum, ea lege ut inter movendum crescendo vel decrescendo æquetur semper longitudini LD, describet aream $\frac{LBq - LAq}{2}$, id est, aream $SL \times AB$; quæ subducta de area priore $2SL \times AB$ relinquit aream $SL \times AB$. Pars autem tertia $\frac{ALB}{LD}$, ducta itidem per motum localem normaliter in eandem longitudinem, describet aream hyperbolicam; quæ subducta de area $SL \times AB$ relinquet aream quæsitam ANB. Unde talis emergit problematis constructio. Ad puncta L, A, B erige perpendicula Ll, Aa, Bb, quorum Aa ipsi LB, & Bb ipsi LA æquetur. Asymptotis Ll, LB, per puncta $a\,b$ describatur hyperbola ab. Et acta chorda ba claudet aream aba areæ quæsitæ ANB æqualem.



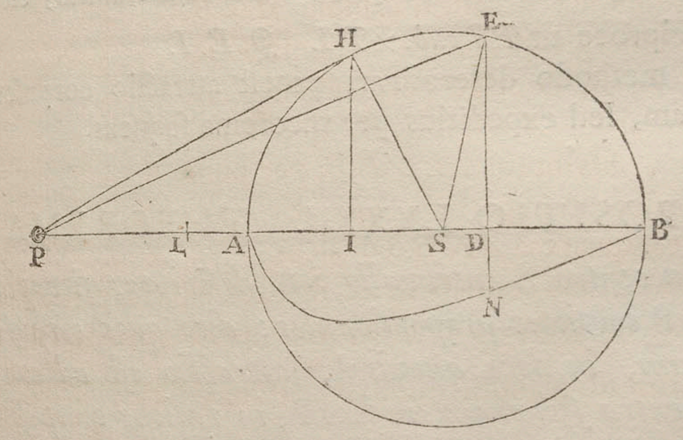
Exempl. 2. Si vis centripeta ad singulas sphæræ particulas tendens sit reciproce ut cubus distantiæ, vel (quod perinde est) ut cubus ille applicatus ad planum quodvis datum; scribe $\frac{PE\,cub.}{2ASq}$ pro V, dein $2PS \times LD$ pro PEq; & fiet DN ut $\frac{SL \times ASq}{PS \times LD} - \frac{ASq}{2PS}$

$-ALB$

$- \frac{ALB \times ASq}{2PS \times LDq}$, id est (ob continue proportionales PS, AS, SI) ut $\frac{LSI}{LD} - \frac{1}{2}SI - \frac{ALB \times SI}{2LDq}$. Si ducantur hujus partes tres in longitudinem AB, prima $\frac{LSI}{LD}$ generabit aream hyperbolicam; secunda $\frac{1}{2}SI$ aream $\frac{1}{2}AB \times SI$; tertia $\frac{ALB \times SI}{2LDq}$ aream $\frac{ALB \times SI}{2LA} - \frac{ALB \times SI}{2LB}$, id est $\frac{1}{2}AB \times SI$. De prima subducatur summa secundæ & tertiæ, & manebit area quæsita ANB. Unde talis emergit problematis constructio. Ad puncta L, A, S, B erige perpendicula Ll, Aa, Ss, Bb, quorum Ss ipsi SI æquetur, perque punctum s asymptotis Ll, LB describatur hyperbola asb occurrens perpendiculis Aa, Bb in a & b; & rectangulum $2ASI$ subductum de area hyperbolica $AasbB$ relinquet aream quæsitam ANB.



Exempl. 3. Si vis centripeta, ad singulas sphæræ particulas tendens, decrescit in quadruplicata ratione distantiæ a particulis; scribe $\frac{PEqq}{2AS\,cub.}$ pro V, dein $\sqrt{2PS \times LD}$ pro PE, & fiet DN ut



$$\frac{SIq \times SL}{\sqrt{2SI}} \times \frac{1}{\sqrt{LDc}} - \frac{SIq}{2\sqrt{2SI}} \times \frac{1}{\sqrt{LD}} - \frac{SIq \times ALB}{2\sqrt{2SI}} \times \frac{1}{\sqrt{LDqc}}.$$

Cujus